



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
 10.03.1999 Bulletin 1999/10

(51) Int. Cl.⁶: **H01L 21/3213**, **H01L 21/306**,
C11D 1/00

(43) Date of publication A2:
 04.11.1998 Bulletin 1998/45

(21) Application number: **98106466.0**

(22) Date of filing: **08.04.1998**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
 Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **11.04.1997 JP 94045/97**

(71) Applicant:
MITSUBISHI GAS CHEMICAL COMPANY, INC.
Chiyoda-ku, Tokyo (JP)

(72) Inventors:
 • **Aoyama, Tetsuo,**
Mitsubishi Gas Chem. Comp. Inc.
Niigata-shi, Niigata-ken (JP)

• **Hasemi, Ryuji,**
Mitsubishi Gas Chem. Comp. Inc.
Niigata-shi, Niigata-ken (JP)
 • **Ikeda, Hidetoshi,**
Mitsubishi Gas Chem. Comp. Inc.
Niigata-shi, Niigata-ken (JP)
 • **Hada, Mayumi,**
Mitsubishi Gas Chem. Comp. Inc.
Niigata-shi, Niigata-ken (JP)

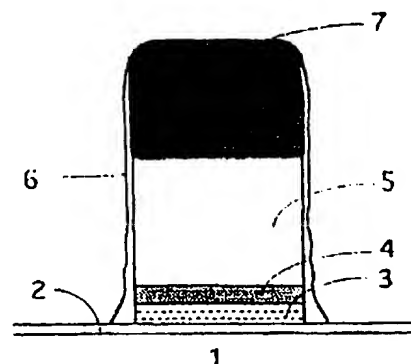
(74) Representative:
Türk, Gille, Hrabal
Brucknerstrasse 20
40593 Düsseldorf (DE)

(54) **Detergent for semiconductor circuit and method for manufacturing semiconductor circuit by use of same**

(57) There are herein disclosed a detergent for a semiconductor circuit which comprises a quaternary ammonium hydroxide, a water-soluble organic solvent and water; a detergent for a semiconductor circuit which comprises a sugar and/or a sugar alcohol in addition to the above-mentioned components; and a method for manufacturing a semiconductor circuit by the use of the above-mentioned detergent.

According to the detergent for a semiconductor circuit of the present invention, a sidewall protective deposited film (a deposited polymer) formed by dry etching can easily be removed, and various kinds of metallic materials which are wire materials can be prevented from corroding, and any corrosion by the etching is not generated, either.

FIG. 1





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 10 6466

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 5 185 235 A (SATO HIROMITSU ET AL) 9 February 1993 * column 1, line 9 - column 3, line 52 *	1,3-5	H01L21/3213 H01L21/306 C11D1/00
X	WO 94 05766 A (CIRCUIT CHEMICAL PRODUCTS GMBH ;BACH WOLF (DE); STADELMANN HEINZ () 17 March 1994 * page 1, line 1 - page 7, line 3 *	1,3,4	
X	EP 0 253 675 A (SYNTEX INC) 20 January 1988 * page 3, line 14 - page 4, line 35 *	1,5	
X	JP 07 028254 A (KANTO CHEM CO INC) 31 January 1995 * the whole document *	2	
A	EP 0 578 507 A (EKC TECHNOLOGY INC) 12 January 1994 * page 2, line 1 - page 4, line 24 * * page 5, line 44 - page 8, line 26; example 6 *	1,3-6	
A	WO 88 05813 A (MACDERMID INC) 11 August 1988 * page 4, line 24 - page 11, line 14 *	1,3-5	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H01L C11D G03F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11 January 1999	Examiner Micke, K
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03 82 (P4/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 10 6466

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

11-01-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5185235 A	09-02-1993	DE 3830440 A	23-03-1989
		JP 1158444 A	21-06-1989
		JP 2591644 B	19-03-1997
WO 9405766 A	17-03-1994	WO 9406265 A	17-03-1994
		AU 2494092 A	29-03-1994
		AU 3350193 A	29-03-1994
EP 0253675 A	20-01-1988	US 4686002 A	11-08-1987
		CA 1306660 A	25-08-1992
		DE 3776995 A	09-04-1992
		GR 3003964 T	16-03-1993
		JP 2572069 B	16-01-1997
		JP 63054344 A	08-03-1988
		KR 9507339 B	10-07-1995
JP 07028254 A	31-01-1995	NONE	
EP 0578507 A	12-01-1994	US 5334332 A	02-08-1994
		JP 6266119 A	22-09-1994
		KR 9707328 B	07-05-1997
		US 5482566 A	09-01-1996
		US 5672577 A	30-09-1997
WO 8805813 A	11-08-1988	AU 1158288 A	24-08-1988
		EP 0301044 A	01-02-1989
		JP 1502059 T	13-07-1989
		ZA 8707008 A	23-03-1988